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Docket No.: 0941-0791P

Application No. 10/620,458
Amendment dated October 2, 2006
After Final Office Action of June 30, 2006

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A method for calibrating a laser three-dimensional digitizing sensor, comprising:

defining a three-dimensional coordinator X-Y-Z;

providing a calibrating surface;

projecting a laser light plane onto the calibrating surface to form a bright line thereon, wherein the laser light plane and the bright line are parallel to X-Z plane;

translating the calibrating surface along the Z axis to establish a first mapping table of a two-dimensional digital image to the Z coordinate.

rotating the calibrating surface by a predetermined first angle along the Y axis then translating along the Z axis to establish a second mapping table of the two-dimensional digital image to the $[[Z]]X$ coordinate according to the established first mapping table.

2. (Currently Amended) The method for calibrating a laser three-dimensional digitizing sensor as claimed in claim 1 further comprising the following step:

rotating the calibrating surface by a predetermined second angle along the X axis then translating along the Z axis to establish a third mapping table of the two-dimensional digital image to the Y coordinate according to the established first mapping table.

3. (Currently Amended) ~~An~~ A method for calibrating a laser three-dimensional digitizing sensor, comprising:

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providing a base plane, a laser sensor generating a laser light plane, a flat block having a calibrating surface, a rotating axis perpendicular to the base plane, a translating axis perpendicular to the rotating axis;

projecting the laser light plane onto the calibrating surface forming a bright line.

adjusting the laser light plane parallel to the base plane;

adjusting the flat block such that the calibrating surface is perpendicular to the translating axis;

translating the flat block to a plurality of predetermined ~~first~~ calibrating positions along the translating axis then recording corresponding bright line images made by the laser sensor at each ~~first~~ calibrating position to establish a first mapping table for the coordinate along the translating axis;

rotating the flat block a predetermined angle along the rotating axis, translating the flat block to ~~a plurality of predetermined second~~ the calibrating positions along the translating axis, then recording corresponding bright line images made by the laser sensor at each ~~second~~ calibrating position to establish a second mapping table of the coordinate along an axis perpendicular to the translating axis and the rotating axis from the established first mapping table.

4-8. (Cancelled)